

(12) UK Patent Application (19) GB (11) 2 041 741 A

(21) Application No 7923142
(22) Date of filing 3 Jul 1979
(30) Priority data
(31) 39387/78
(32) 5 Oct 1978
(33) United Kingdom (GB)
(43) Application published
17 Sep 1980

(51) INT CL³
A46B 9/02
(52) Domestic classification
A4K DD

(56) Documents cited
GB 1369426
GB 411801
GB 411753
GB 253802
US 3588937A

(58) Field of search
A4K

(71) Applicants
Accrington Brush
Company Limited, Eureka
Works, Lower Grange
Mill, Church Street,
Accrington, County of
Lancaster

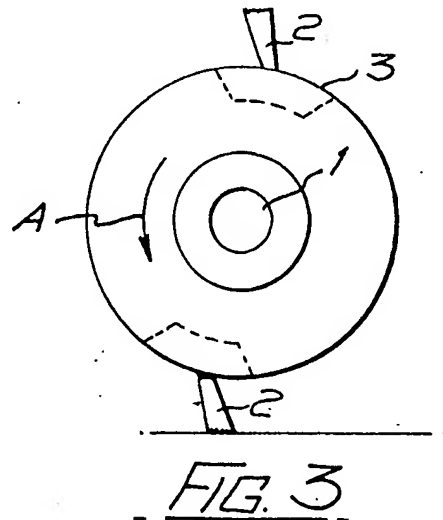
(72) Inventor
John Phillips Stubbs

(74) Agents
J. Owden O'Brien & Son

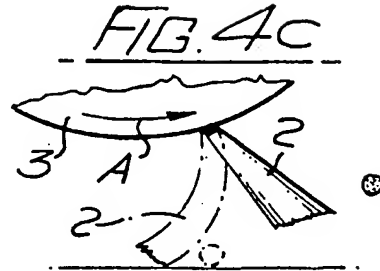
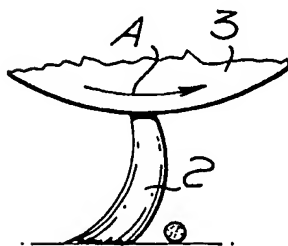
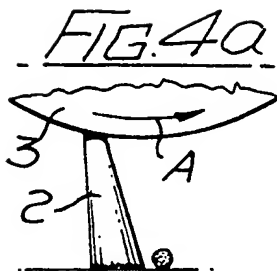
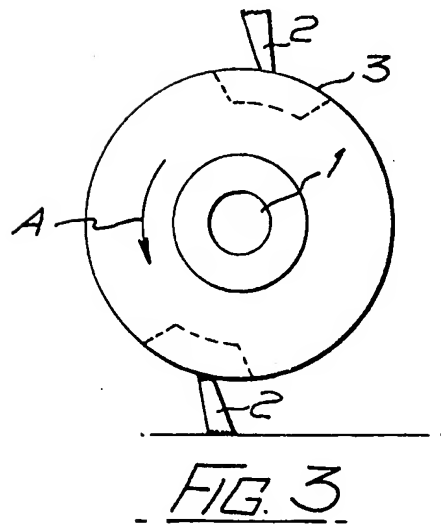
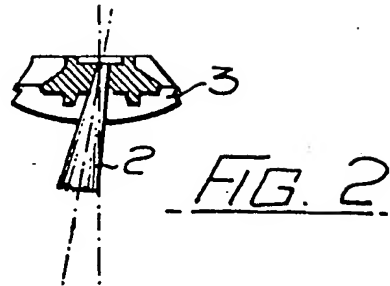
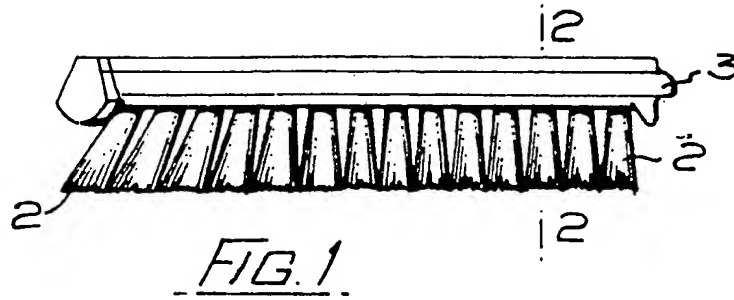
(54) Rotary brushes

(57) A method for the production of rotary brushes in which the tufts of bristles 2 or equivalent brush material are positioned on the brush spindle in bores or grooves, the bores or grooves

being inclined at an angle of 1° — 6° to the brush axis 1 to impart a lead to the bristles or brush material as the tufts contact the ground causing the tufts to "flick". The brushes are particularly applicable to vacuum cleaners.



GB2 041 741 A



SPECIFICATION

Improvements in the manufacturing of brushes

This invention relates to an improved method for the production of rotary brushes of carpet sweepers, vacuum cleaners and the like.

Rotary brushes for use on carpet sweepers, vacuum cleaners etc. are normally formed with a plurality of tufts of bristles arranged in a plurality of longitudinal or helical rows and the object of the present invention is to increase the dust collecting property of the brush.

According to the invention the method comprises setting tufts of bristles in a spindle at an acute leading angle to the direction of rotation, the angle being determined by the bristle material length of the tufts and speed of rotation.

The invention will be described with reference to the accompanying drawings.

Fig. 1 is a front elevation of a brush,

Fig. 2 is a section on line 2—2 Fig. 1.

Fig. 3 is an end view to a large scale showing two rows of inclined bristles.

Fig. 4a, 4b, 4c show the bristles in three positions during operation.

A rotary brush spindle 1 is bored or grooved to receive a plurality of tufts of bristles 2, the angle of the bores or grooves being inclined at an acute angle to the axis of the spindle 1 to impart a lead to the bristles in the direction of rotation, shown by the arrow A.

The term bristles is defined as including bristles or other known brush filling material.

The setting of the tufts of bristles 2 at an acute angle to the axis of the spindle i.e. angled away from a radius to create a lead angle as the brush meets the surface being swept.

The angle is determined for tufts of bristles 2 of the varying material, length of the tufts of bristles, speed of rotation etc., in the range 1° to 6°.

The trimming of the brush is tangential to the roller body 3 on a radial centre line from the leading edge of the tuft (Fig. 3a).

The effect of setting the tufts of bristles 2 with a lead angle is that the tip of the brush meets the surface being swept before the bottom centre of mounting (Fig. 4b) of the tuft and when passing through the bottom centre of the brush material is flexed through the lead angle. After passing through the bottom centre the flexed material returns to its original form causing a flick action in advance of the peripheral speed (Fig. 4c).

This flick action is of particular advantage on brushes which have the tufts splayed outwards to give a wider sweep area.

The longitudinal angling creates a longer and virtually unsupported tuft which tends to trail behind the line of sweep, resulting in less of a sweeping action. By compounding this angle to include a radial lead, a more thrusting action is obtained, and less of a sweeping action at the outer edges is eliminated.

The lead angle may be progressively increased in proportion to progressive increase in longitudinal angling.

The tufts may be set directly into the rollers either in longitudinal rows or in spirals or they may be mounted in plastics or other inserts affixed in grooves or otherwise in the spindle.

CLAIMS

1. A method for the production of rotary brushes for carpet sweepers, vacuum cleaners and the like comprising setting tufts of bristles in a spindle at an acute leading angle to the direction of rotation, the angle being determined by the bristle material length of the tufts and speed of rotation.

2. A method as in Claim 1 in which the leading angle is in the range 1° to 6°.

3. A method for the production of brushes substantially as hereinbefore described.

4. A brush for a carpet sweeper, vacuum sweeper and the like substantially as described with reference to the accompanying drawing when produced by the method of Claim 1.